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| APPLICATION NO.                                                                            | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/562,743                                                                                 | 05/01/2006  | Heinz-Werner Morrell | 502901-218PUS       | 7809             |
| 27799                                                                                      | 7590        | 01/17/2007           | EXAMINER            |                  |
| COHEN, PONTANI, LIEBERMAN & PAVANE<br>551 FIFTH AVENUE<br>SUITE 1210<br>NEW YORK, NY 10176 |             |                      | WEST, JEFFREY R     |                  |
|                                                                                            |             |                      | ART UNIT            | PAPER NUMBER     |
|                                                                                            |             |                      | 2857                |                  |
| SHORTENED STATUTORY PERIOD OF RESPONSE                                                     | MAIL DATE   |                      | DELIVERY MODE       |                  |
| 3 MONTHS                                                                                   | 01/17/2007  |                      | PAPER               |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/562,743             | MORRELL ET AL.      |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Jeffrey R. West        | 2857                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 14 December 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 12-19 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 12-19 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 01 May 2006 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/29/05</u>                                                  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

### *Drawings*

2. The drawings are objected to because of the following informalities:

The drawings in Figure 1 and 2 are objected to because the reference numbers are not correctly aligned with the components that they are labeling, specifically, "Function section 4", "Checking section 5", "Monitoring section 6", and "Amplifier 22".

The drawing in Figure 2 is objected to because it does not have sufficiently descriptive labels. Blank boxes in drawings should be labeled descriptively unless it is a well-known component, specifically, blank boxes "7", "15" and "20" should be labeled descriptively.

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in

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reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

4. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.
  
5. The disclosure is objected to because of the following informalities:

On page 4, line 32. "On being switched on" should be something similar to ---

When switched on---.

Appropriate correction is required.

### ***Claim Objections***

6. Claims 12 and 14 are objected to because of the following informalities:

In claim 12, line 3, to avoid problems of antecedent basis, "supporting the function" should be ---supporting a function---.

In page 12, line 3, to avoid problems of antecedent basis, "sensor and" should be ---sensor element and---.

In claim 12, line 5, to avoid problems of antecedent basis, "the continuous checking" should be ---continuous checking---.

In claim 14, line 2, "to compare" should be ---compare---.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 12-14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable

over U.S. Patent Application Publication No. 2004/0002808 to Hashimoto et al. in view of U.S. Patent No. 4,727,549 to Tulpule et al.

With respect to claim 12, Hashimoto discloses a safety device for a rotation rate sensor (0087, lines 1-3), comprising a sensor element (0087, lines 1-3 and "130" (Figure 3) and circuits including a function section (i.e. sensor interface "111a") (0093, lines 1-3 Figure 1), a checking section (i.e. microprocessor "110") (0101, lines 1-6) and a monitoring section (0105, lines 1-8), the function section including functional components supporting the function of the sensor and producing a sensor output signal (0087, lines 1-3, 0093, lines 1-3, and 0132, lines 1-4), the checking section including checking components designed for the continuous checking of the functional components (0237, lines 1-9), and the monitoring section comprising monitoring components designed for monitoring the checking components at least once during one operating cycle (0105, lines 1-8), the monitoring components comprising a clock detector component monitoring a clock (i.e. WD) of a microcomputer contained in the checking section and a watchdog circuit monitoring the microcomputer (0105, lines 1-8).

With respect to claim 13, Hashimoto discloses that the checking components measure values in the function section and compare the measured values with limit values (0237, lines 1-9).

With respect to claim 14, Hashimoto discloses that the checking components measure the sensor output signal and to compare the measured sensor output signal with limit values (0237, lines 1-9).

With respect to claim 18, Hashimoto discloses that the monitoring components are designed essentially to monitor digital checking components (i.e. the microprocessor of the checking components) (0105, lines 1-8).

As noted above, the invention of Hashimoto teaches many of the features of the claimed invention and while the invention of Hashimoto does teach a watchdog circuit as part of a monitoring section for monitoring the microcomputer of the checking section, Hashimoto does not specifically disclose a memory testing device for testing memories within the checking section.

Tulpule teaches a watchdog activity monitor for use with a high coverage processor self-test comprising a microprocessor (column 6, lines 35-44) which is tested (column 6, lines 45-51) using an independent (column 2, lines 15-23) watchdog circuit (column 7, lines 3-14) that tests the memories of the microprocessor (column 7, lines 24-40).

It would have been obvious to one having ordinary skill in the art to modify the invention of Hashimoto to specifically disclose means for testing memories within the checking section, as taught by Tulpule, because, as suggested by Tulpule, the combination would have improved the monitoring of Hashimoto by confirming that the microprocessor address decoding is accurate thereby confirming overall operation of the microprocessor of Hashimoto and insuring accurate sensor functionality (column 7, lines 36-53).

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Hashimoto et al. in view of Tulpule et al. and further in view of U.S. Patent No. 4,916,698 to McCann.

As noted above, the invention of Hashimoto and Tulpule teaches many of the features of the claimed invention and while the invention of Hashimoto and Tulpule does teach interface/conditioning circuitry as part of the functional components of the function section and checking components, including a microprocessor, designed for continuous checking of the functional components, the combination does not specify that the checking components comprise a test injector producing and supplying test signals to the functional components, the checking components testing the functional components and measuring a reaction of the functional components to the test signals.

McCann teaches a failure detection mechanism for microcontroller based control system comprising a speed sensor and signal conditioning circuitry acting as part of functional components (column 2, lines 25-31 and 38-41) and a microprocessor acting as part of a checking section that comprises a test injector producing and supplying test signals to the functional components, the checking components testing the functional components and measuring a reaction of the functional components to the test signals (column 3, lines 5-13).

It would have been obvious to one having ordinary skill in the art to modify the invention of Hashimoto and Tulpule to specify that the checking components comprise a test injector producing and supplying test signals to the functional components, the checking components testing the functional components and

measuring a reaction of the functional components to the test signals, as taught by McCann, because, as suggested by McCann, the combination would have improved sensing system of Hashimoto and Tulpule by insuring that the various input/output ports of the sensor and interface/conditioning circuitry of Hashimoto and Tulpule are appropriately responding to the microprocessor (column 3, lines 5-13).

10. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. in view of Tulpule et al. and further in view of U.S. Patent No. 5,406,485 to Wise et al.

As noted above, the invention of Hashimoto and Tulpule teaches many of the features of the claimed invention and while the invention of Hashimoto and Tulpule does teach obtaining data from functional components that are part of a function section of a vehicle rotation rate sensor as well as a checking section for accessing the output of the functional components, the combination does not explicitly indicate that the function section comprises digital components and analog components, the checking components including checking analog components and at least one ADC for accessing registers of the digital components and measuring analog signals at the analog components.

Wise teaches a method and apparatus for detecting faulty operation of a wheel speed sensor comprising a sensor (column 3, lines 11-13) and associated interface and functional components (i.e. function section) (column 3, lines 11-20) wherein the function section comprises digital components (column 3, lines 51-54) and analog

components (column 4, lines 39-57), and checking components include checking analog components for measuring analog signals at the analog components (column 3, lines 42-46) and at least one ADC for accessing registers of the digital components (column 3, lines 51-60).

It would have been obvious to one having ordinary skill in the art to modify the invention of Hashimoto and Tulpule to explicitly indicate that the function section comprises digital components and analog components, the checking components including checking analog components and at least one ADC for accessing registers of the digital components and measuring analog signals at the analog components, as taught by Wise, because the invention of Hashimoto and Tulpule discloses a system for monitoring the output of a plurality of vehicle sensors (Hashimoto; Figure 1) and Wise suggests an applicable vehicle sensor and associated monitoring method that would have provided corresponding means for insuring the accuracy of the speed sensor while providing increased functionality of Hashimoto and Tulpule by including advanced conditioning aspects and the ability to store the data for speed computations (column 2, lines 33-46 and column 3, lines 42-46 and 51-60).

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. in view of Tulpule et al. and further in view of U.S. Patent No. 6,568,267 to Chida et al.

As noted above, the invention of Hashimoto and Tulpule teaches many of the features of the claimed invention and while the invention of Hashimoto and Tulpule

does teach a function section, checking section, and monitoring section, the combination does not specifically indicate that the sections are formed by an ASIC with dedication sections.

Chida teaches a sensing devices and sensor apparatus wherein the sensor is formed from an ASIC, inherently comprising gates, having a main central processing section and separate dedicated sections for performing different specific computations, functions, and other processes (column 20, lines 57-65).

It would have been obvious to one having ordinary skill in the art to modify the invention of Hashimoto and Tulpule to specifically indicate that the sections are formed by an ASIC with dedication sections, as taught by Chida, because Chida suggests that, and as is known by one having ordinary skill in the art, ASICs with dedicated functionality are a common device for providing different dedicated functional sections as would be desirable in the sensor system of Hashimoto and Tulpule (column 20, lines 57-65).

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

U.S. Patent Application Publication No. 2003/0187569 to Iwagami et al. teaches a vehicle-mounted electronic control apparatus.

U.S. Patent No. 6,510,397 to Choe teaches a method and apparatus for self-diagnosis of a sensor.

U.S. Patent No. 5,890,078 to Furuta teaches a synthetic control system for an automobile.

U.S. Patent No. 5,791,432 to Fushimi et al. teaches a steering control apparatus for an automotive vehicle.

U.S. Patent No. 5,713,643 to Esselbrugge et al. teaches a control circuit for automotive vehicle motion control systems.

U.S. Patent No. 5,588,720 to Mattern teaches a circuit arrangement for a brake system with anti-lock system and/or traction control.

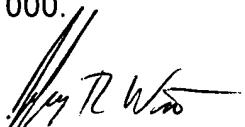
U.S. Patent No. 5,170,343 to Matsuda teaches a fail-safe system for multiple control systems having at least one common sensor for monitoring a common control parameter.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. West whose telephone number is (571)272-2226. The examiner can normally be reached on Monday through Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571)272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeffrey R. West  
Examiner – AU 2857

January 7, 2007